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FULL ESTIMATED COST	56.32	111.74
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CA SUBSCRIBER PRICE	0.00	-5.25

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=> s dihydroorotase and herbicide
 L13 5 DIHYDROOROTASE AND HERBICIDE

=> dup rem l13
 PROCESSING COMPLETED FOR L13
 L14 3 DUP REM L13 (2 DUPLICATES REMOVED)

=> d l14 1-3 ibib ab

L14 ANSWER 1 OF 3 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on
 STN
 ACCESSION NUMBER: 2002:222230 SCISEARCH
 THE GENUINE ARTICLE: 525ZQ
 TITLE: Barbiturase, a novel zinc-containing amidohydrolase
 involved in oxidative pyrimidine metabolism
 AUTHOR: Soong C L; Ogawa J; Sakuradani E; Shimizu S (Reprint)
 CORPORATE SOURCE: Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku,
 Kitashirakawa Oiwakecho, Kyoto 6068502, Japan (Reprint);
 Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku,
 Kyoto 6068502, Japan
 COUNTRY OF AUTHOR: Japan
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1 MAR 2002) Vol. 277,
 No. 9, pp. 7051-7058.
 ISSN: 0021-9258.
 PUBLISHER: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650
 ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA.
 DOCUMENT TYPE: Article; Journal
 LANGUAGE: English
 REFERENCE COUNT: 48
 ENTRY DATE: Entered STN: 22 Mar 2002
 Last Updated on STN: 22 Mar 2002

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Barbiturase, which catalyzes the reversible amidohydrolysis of
 barbituric acid to ureidomalonic acid in the second step of oxidative
 pyrimidine degradation, was purified to homogeneity from *Rhodococcus*
erythropolis JCM 3132. The characteristics and gene organization of
 barbiturase suggested that it is a novel zinc-containing amidohydrolase
 that should be grouped into a new family of the amidohydrolases

superfamily. The amino acid sequence of barbiturase exhibited 48% identity with that of herbicide atrazine-decomposing cyanuric acid amidohydrolase but exhibited no significant homology to other proteins, indicating that cyanuric acid amidohydrolase may have evolved from barbiturase. A putative uracil phosphoribosyltransferase gene was found upstream of the barbiturase gene, suggesting mutual interaction between pyrimidine biosynthesis and oxidative degradation. Metal analysis with an inductively coupled radiofrequency plasma spectrophotometer revealed that barbiturase contains similar to 4.4 mol of zinc per mol of enzyme. The homotetrameric enzyme had K-m and V-max values of 1.0 mM and 2.5 μmol/min/mg of protein, respectively, for barbituric acid. The enzyme specifically acted on barbituric acid, and dihydro-L-orotate, alloxan, and cyanuric acid competitively inhibited its activity. The full-length gene encoding the barbiturase (bar) was cloned and overexpressed in Escherichia coli. The kinetic parameters and physicochemical properties of the cloned enzyme were apparently similar to those of the wild-type.

L14 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
 ACCESSION NUMBER: 2001:185903 HCAPLUS
 DOCUMENT NUMBER: 134:233609
 TITLE: Potato dihydroorotate and cDNA and methods for screening for herbicides
 INVENTOR(S): Ehrhardt, Thomas; Lerchl, Jens; Stitt Nigel, Marc; Zrenner, Rita; Schroeder, Michael
 PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
 SOURCE: PCT Int. Appl., 38 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001018190	A2	20010315	WO 2000-EP8581	20000902
WO 2001018190	A3	20011011		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2379536	AA	20010315	CA 2000-2379536	20000902
BR 2000013798	A	20020514	BR 2000-13798	20000902
EP 1210437	A2	20020605	EP 2000-962429	20000902
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP 2003509026	T2	20030311	JP 2001-522401	20000902
AT 311455	E	20051215	AT 2000-962429	20000902
PRIORITY APPLN. INFO.:			DE 1999-19942742	A 19990907
			WO 2000-EP8581	W 20000902

AB The invention relates to a potato cDNA which codes for dihydroorotate (EC 3.5.2.3). The invention also relates to the use of these nucleic acids for producing a system for screening for dihydroorotate-inhibiting compds., potential herbicides. Thus, transgenic potatoes expressing antisense dihydroorotate cDNA exhibited reduced growth. Growth inhibition was proportional to the degree of inhibition of dihydroorotate gene expression.

L14 ANSWER 3 OF 3 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN DUPLICATE 2

ACCESSION NUMBER: 1998-02452 BIOTECHDS
TITLE: AtzC is a new member of the aminohydrolase protein superfamily and is homologous to other atrazine-metabolizing enzymes;
AUTHOR: potential application in atrazine pesticide degradation
Sadowsky M J; Tong Z; De SouzaM; Wackett L P
CORPORATE SOURCE: Univ. Minnesota
LOCATION: Department of Soil, Water and Climate, University of Minnesota, 439 Borlaug Hall, 1991 Upper Buford Circle, St. Paul, MN 55108, USA.
Email: sadowsky@soils.umn.edu
SOURCE: J.Bacteriol.; (1998) 180, 1, 152-58
CODEN: JOBAAY
ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pseudomonas sp. strain ADP metabolizes atrazine to cyanuric acid via 3 plasmid-encoded enzymes, AtzA, AtzB and AtzC. The 3rd gene in the atrazine catabolic pathway, atzC, was cloned from a Pseudomonas sp. strain ADP cosmid library as a 25-kb EcoRI DNA fragment in Escherichia coli. The atzC gene was further delimited by functional analysis following transposon Tn5 mutagenesis and subcloned as a 2 kb EcoRI-AvaI fragment. An Escherichia coli strain containing this DNA fragment expressed N-isopropylammelide-isopropylamino-hydrolase activity, metabolizing N-isopropylammelide stoichiometrically to cyanuric acid and N-isopropylamine. The 2.0-kb DNA fragment was sequenced and found to contain a single open reading frame of 1,209 nucleotides, encoding a protein of 403 amino acids. AtzC showed modest sequence identity of 29 and 25%, respectively, to cytosine-deaminase and dihydroorotate, both members of an amidohydrolase protein superfamily. Overall, data suggested that AtzA, AtzB and AtzC diverged from a common ancestor and, by random events, have been reconstituted onto an atrazine catabolic plasmid. (37 ref)

=> d his

(FILE 'HOME' ENTERED AT 16:37:14 ON 15 FEB 2006)

FILE 'MEDLINE, HCPLUS, BIOSIS, EMBASE, BIOTECHDS, SCISEARCH' ENTERED AT 16:37:55 ON 15 FEB 2006

L1 174 S DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
L2 87 DUP REM L1 (87 DUPLICATES REMOVED)
L3 49 S L2 AND 1980-1999/PY
L4 49 FOCUS L3 1-
L5 1 S L4 AND PLANT
L6 1 S PLANT DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
L7 1 S POTATO DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
L8 2 S (POTATO OR TOBACCO OR ARABIDOPSIS OR TOMATO OR SOLANUM OR WHE
L9 1 DUP REM L8 (1 DUPLICATE REMOVED)

FILE 'REGISTRY' ENTERED AT 16:47:55 ON 15 FEB 2006

L10 350 S DIHYDROOROTASE
L11 0 S PLANT DIHYDROOROTASE
L12 136 S AMINOHYDROLASE

FILE 'MEDLINE, HCPLUS, BIOSIS, EMBASE, BIOTECHDS, SCISEARCH' ENTERED AT 16:51:57 ON 15 FEB 2006

L13 5 S DIHYDROOROTASE AND HERBICIDE
L14 3 DUP REM L13 (2 DUPLICATES REMOVED)

=> log y

COST IN U.S. DOLLARS
FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
20.46	132.20